Claims

1. A method for decomposing H_2O_2 comprising, passing said H_2O_2 over an activated catalyst, said activated catalyst having a porous base, said porous base being doped with a calcined cation selected from the group consisting of Mn, Ag, Ru, Pb, V, Cr and Co, said base being monolithic or being divided into particles which are closely packed into a container.

2. The method of claim 1 wherein said base is also doped with at least one catalytic promoter, selected from NH_4^+ and Groups I and II of the Periodic Table.

3. The method of claim 2 wherein said promoter is selected from the group consisting of K^+, Na^+, NH_4^+, Li^+, Sr^+ and Ba^+.

4. The method of claim 1 wherein said activated catalyst is formed into a pack of a shape selected from the group consisting of cylindrical, conical, tubular and a combination thereof.

5. The method of claim 1 wherein said activated catalyst is in granules and is poured into a vessel communicating with a pressurized H_2O_2 storage tank and packed in said vessel for contact with and decomposition of, said H_2O_2 as needed, which vessel is vented to discharge the products of decomposition.

6. The method of claim 1 wherein said activated catalyst is contacted with said H_2O_2 in a vehicle having an exhaust nozzle for discharging the decomposition products of said H_2O_2 to propel said vehicle.

7. A method for decomposing H_2O_2 comprising,

a) mixing a soluble salt of a catalyst cation into solvent therefor to form a mixture of cations, the cation species being selected from the group consisting of Mn, Ag, Ru, Pb, V, Cr and Co,

b) contacting said mixture with a porous [monolithic] ceramic catalyst carrier in an amount sufficient to impregnate said catalyst carrier over the surfaces thereof,

c) drying the so impregnated carrier so as to remove solvent therefrom,

d) calcining said carrier so as to form a bulk or activated catalyst, said base being monolithic or being divided into particles which are closely packed into a container, and

e) contacting said catalyst with H_2O_2 to decompose same.

8. The method of claim 7 wherein at least one catalytic promoter, selected from NH_4^+ and Groups I and II of the Periodic Table, is added to said solvent.

9. The method of claim 8 wherein said promoter is selected from the group consisting of K^+, Na^+, NH_4^+, Li^+, Sr^+ and Ba^+.

10. The method of claim 7 wherein said ceramic catalyst carrier is of a material selected from the group consisting of aluminosilicates, alumina, and silica.

11. The method of claim 7 wherein said cation is loaded on said catalyst carrier in a range of .01 to 20.0 wt. %, metals basis.

12. The method of claim 7 wherein said catalyst carrier is calcined at 150 to 950 °C.

13. The method of claim 7 wherein said porous ceramic carrier is in the form selected from the group consisting of a monolith, honeycomb or chunks, extrudate, pieces, pellets, spheres, herein particles, and a combination thereof closely packed.

14. The method of claim 7 wherein the calcined carrier is contacted with said H_2O_2 in a vehicle having an exhaust nozzle for discharging the decomposition products of said H_2O_2 to propel said vehicle.

15 The method of claim 14 wherein said vehicle is a rocket.

16. The method of claim 14 wherein said vehicle is selected from the group consisting of a land vehicle, a water vehicle, an aircraft and a spacecraft.

17. The method of claim 14 wherein the decomposition products of said H_2O_2 are contacted with fuels selected from solid or liquid propellants in a rocket.

18. A method for decomposing H_2O_2 comprising contacting at least one cation with surfaces of a porous ceramic carrier and calcining same to form a bulk or activated catalyst, said base being monolithic or being divided into particles which are securely packed into a container, the cation species being selected from the group consisting of Mn, Ag, Ru, Pb, V, Cr and Co and contacting said catalyst with H_2O_2 to decompose same.

19. The method of claim 18 wherein said carrier has added thereon at least one catalytic promoter, selected from NH_4^+ and Groups I and II of the Periodic Table.

20. The method of claim 19 wherein said promoter is selected from the group consisting of K^+, Na^+, NH_4^+, Li^+, Sr^+ and Ba^+.

21. The method of claim 20 wherein the cation loading on the catalyst carrier is .01 to 20.0 wt. % of the bulk catalyst.